J. HABERMEHL.

Grate.

No. 167,609. Patented Sept. 14, 1875.

Fig. 1.

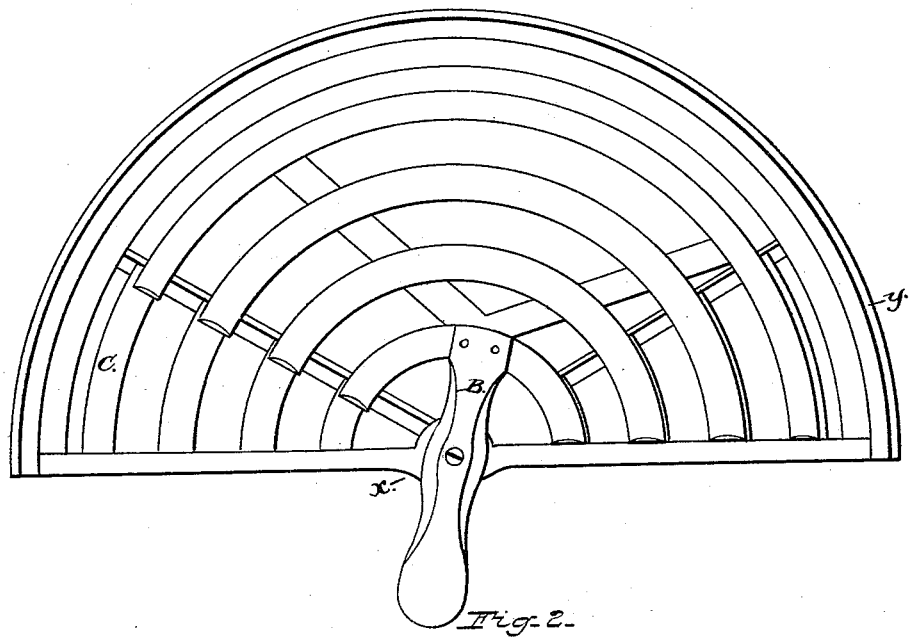


Fig. 2.

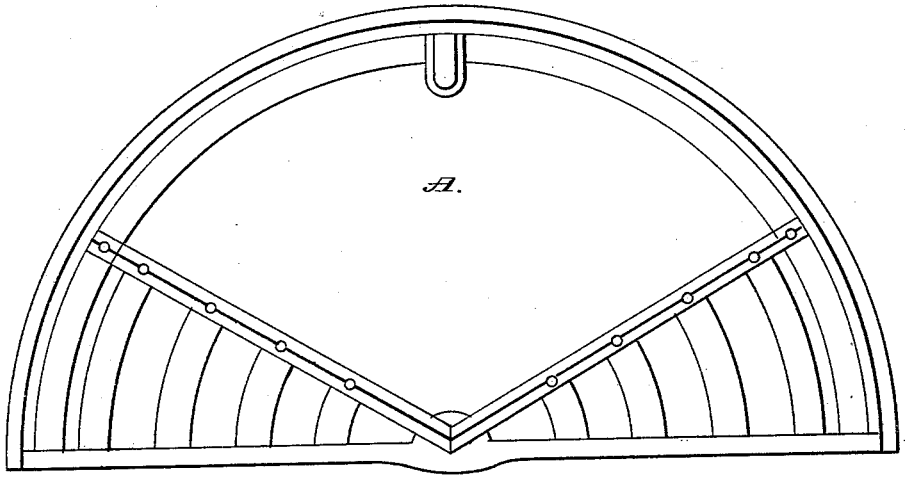
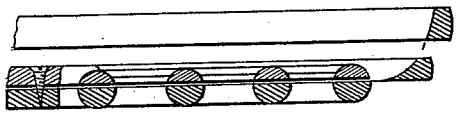


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

JOHN HABERMEHL, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN GRATES.

Specification forming part of Letters Patent No. **167,609**, dated September 14, 1875; application filed June 1, 1875.

To all whom it may concern:

Be it known that I, JOHN HABERMEHL, of the city of Allegheny and State of Pennsylvania, have invented an Improvement in Shaking Grates for Open Stoves and Fire-Places, of which the following is a specification:

My improvement relates to that class of shaking grates in use for many years, which turn upon a pivot with a reverse alternative circular sliding motion, and of which said improvement—

Figure 1 in the accompanying drawings shows the bottom of the grate; Fig. 2, the bottom, having the agitator B removed. Fig. 3 is a sectional view of Fig. 1, taken in the line of *x y*.

My improvement is best adapted to half-round and square grates in common use for open stoves and fire-places; and my said improvement relates, principally, to two points: First, instead of turning the whole bottom of the grate, the same remains fixed and stationary, and a number of connected bars or an agitating device plays on top of the bottom, turning on a pivot with a circular sliding motion, as shown by Fig. 1. The agitator is turned alternately from side to side by means of a handle, constructed in the manner shown, and, being comparatively small and light, will require much less force to work it than when the whole bottom of the grate is turned or moved.

In using a separate agitator, instead of moving the whole grate I am enabled to overcome the difficulty of obtaining sufficient play-room for half-round or square grates on the sides of the agitator for a circular motion, as shown by the overlapping bars C, Fig. 1.

The agitator may be of any shape or form, if the bottom of the grate be left entire or whole; but this method of construction will exclude the air from the bars of the agitator, rendering the iron liable to burn or warp.

To protect the bars against excessive heat I cut out the middle of the grate to admit air, as shown at A, Fig. 2, and making the agitator large enough to cover the opening, only overlapping the bars of the bottom on its sides, as shown at Fig. 1.

Second, it will be observed that the bars of the grate are curved in a circle in a line with the circular motion of the agitator, which is a very important feature of my improvement in point of force required in moving the agitator.

When the agitator moves transversely over the open spaces it must cut or crush the cinders between the bars; but by curving the bars in manner shown the cinders will glide between and over the bars, requiring less force to turn the agitator. Although the agitator will work with greater ease by also curving its bars to be in unison with the circle-bars of the grate, yet it is not absolutely necessary, while the curve of the grate-bars is very important, for the reason explained.

I do not limit myself to any precise manner of constructing the parts herein explained and described. Instead of the bars of the grate having an exact curve, the same may run in straight lines divided in sections within a circle, so that the agitator will pass over the open spaces rather in an oblique manner, in place of following an exact curve of the bottom bars.

I claim as my improvement in shaking grates for stoves and fire-places—

An agitator, movable with a turning sliding motion on the bottom bars, in combination with a grate having its bottom bars curved or running in unison with the circular path or motion of the agitator, substantially as and for the purposes specified.

JOHN HABERMEHL.

Witnesses:
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